

WHAT IS CLAIMED IS:

1. A base station for a mobile radio system, including:  
a plurality of repeaters that provide respective radio channels;  
a station controller connected to each repeater; and  
a radio antenna system connected to the repeaters;  
wherein the repeaters provide a control channel and a plurality of traffic channels for mobile users, with allocation of the control channel being varied among the traffic channels.
2. A base station according to claim 1, wherein:  
the control channel is changed periodically from one repeater to another in a round robin process.
3. A base station according to claim 1, wherein:  
the control channel is changed periodically or non-periodically among the repeaters in a random process.
4. A base station according to claim 1, wherein:  
each repeater normally provides a traffic channel and the control channel is changed intermittently among the repeaters according to a predetermined process skipping those repeaters at which the traffic channel is busy.
5. A base station according to claim 1, wherein:  
allocation of the control channel among the repeaters is determined by the station controller.

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6. A base station according to claim 1, wherein:

each repeater includes a channel controller and allocation of the control channel from one repeater to another is determined by respective channel controllers.

7. A method of providing radio channels in a mobile communication system, including:

allocating a control channel and a plurality of traffic channels for mobile radios in the system; and

intermittently re-allocating the control channel as a traffic channel and one of the other traffic channels as a new control channel.

8. A method according to claim 7, further including:

re-allocating the control channel among the traffic channels on a round robin basis.

9. A method according to claim 7, further including:

re-allocating the control channel among the traffic channels on a random basis.

10. A method according to claim 7, further including:

selecting a channel for re-allocation of the control channel by determining a free traffic channel in a channel control system.

11. A method of re-allocating a control channel in a radio base station, including:

selecting an existing traffic channel to become a new control channel according to a predetermined process;

denying new requests by mobile radios over a current control channel for access to traffic channels;

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completing existing requests by mobile radios over the current control channel for access to traffic channels;

allocating the selected traffic channel as the new control channel and the current control channel as a traffic channel; and

receiving new requests by mobile radios over the new control channel for access to traffic channels.

12. A method according to claim 11, wherein:

the predetermined process includes a round robin poll of traffic channels to locate a channel not currently busy with traffic.

13. A method according to claim 12, wherein:

the poll takes place at periodic or random intervals.

14. A radio network including a base station that implements a method according to claim 7.

15. A radio network including a base station that implements a method according to claim 8.

16. A radio network including a base station that implements a method according to claim 9.

17. A radio network including a base station that implements a method according to claim 10.

18. A radio network including a base station that implements a method according to claim 11.

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19. A radio network including a base station that implements a method according to claim 12.

20. A radio network including a base station that implements a method according to claim 13.

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